

## **ABSTRACT**

A circuit structure and signal encoding method for a serial ATA external physical layer is provided. The circuit structure and signal encoding method thereof is capable of reducing the number of interface signals of a serial ATA external physical layer, essentially comprising a decoder/encoder, a serializer/deserializer, a phase locked loop, at least one transmitters, at least one receivers, and at least one OOB signal detectors, encoding various control signals and various status signals, required for the connection between the decoder/encoder and a storage medium controller, into data signals using signals other than a data conversion requirement of 8bits and 10bits, by means of a decoder/encoder, in order for greatly reducing the number of interface signals required for the connection between the external physical layer and a main control chip.